Data Scientist/Machine Learning/Software Engineer/Security

# DANIEL MUTHAMA

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## Skills

- SQL (SQL Server, MySQL, PostgreSQL, VQL)
- Python (Pandas, NumPy, SciPy, MatPlotLib)
- Tableau, Java, Postilion, C++, R Programming
- Excel (VLookup, Conditional Formatting, Pivot Tables)
- Experiment Design and A/B Testing
- **Comfy UI/AI Workflow:** Expertise in designing, implementing, and maintaining AI/ML workflows
- Microsoft Azure (DataBricks, Azure Data Lake, Azure Data Warehouse)
- PySpark, Angular, Django, Flask, React
- Microsoft Power BI.

- Machine Learning Algorithms, NLP, RAG, LLM CNN, Big Data Tools, TensorFlow and PyTorch
- **Linux/Server Management**: Proficient in server configuration, deployment, maintenance, and troubleshooting for scalable AI/ML infrastructure.
- **Container Technologies:** Experience with containerization principles and orchestration tools for streamlined model deployment and environment management e.g Docker, Kubernetes, Terraform etc.

## Projects

**DATA SCIENCE JOB MARKET EDA** – Personal Project – **KENYA**, KE                                        April 2024

- Utilized **Python** to analyze 7000 data science job listings and gain insights on what it takes to land a job in analytics
- Implemented **Regex** techniques to comb through the job descriptions and identified the key requirements
- Aggregated and visualized the data by using **pandas, matplotlib** and **wordcloud** to compile a professional report.
- Integrated **Stable Diffusion** with **Comfy UI** to create a node-based workflow for rapid prototyping.

**Employee Benefits and Transaction Benchmarking Dashboard – Client's Project – KENYA, KE**       February 2023

- Developed a dashboard using **JavaFX** to help the client compare different employee benefit packages, integrated with Postilion to track payment transactions related to benefit disbursements.
- Transformed and processed the client's benefits and transaction data by using **Apache POI** and **OpenCSV** to ensure data completeness and validity, while monitoring transaction patterns in the Postilion system.
- Provided technical insights on how the client could fully utilize transaction and benefit data, introducing Java-based technologies such as **Spring Boot** for back-end processing and **Hibernate** for database management.
- Consulted with the client to determine the best metrics to be displayed, with a focus on **Postilion payment transaction analysis** for benefits disbursement.

**BENEFIT PACKAGE BENCHMARKING DASHBOARD** – Virtual Client's Project – **KENYA**, KE                    February 2023

- Created a dashboard with **Power Bi** to help client compare between different employee benefit packages
- Transformed and processed client's data by using DAX and Excel to ensure data completeness and validity
- Provided technical insights on how the client can fully utilize their data by introducing different technologies
- Consulted with client to determine the best metrics to be displayed on final product

**SENTIMENT ANALYSIS ON TWEETS** – Personal Project – **KENYA**, KE                                        December 2022

- Utilized **R Studio** to perform sentiment analysis on 14,000 tweeter reviews of six major airlines
- Performed data cleaning and text analysis to successfully identified the major complaints for each airline
- Applied regression and machine learning to produce a final model with an accuracy of 88% and lift of 34%

**CUSTOMER SALES ANALYSIS** – Personal Project – **KENYA**, KE                                        November 2022

- Utilized **SQL** to extract data from 8 different related tables from customer sales databases using **JOIN** and **VIEW**
- Transformed and filtered data by using aggregating and filtering function to improve reporting process

- Loaded and visualized data with **Python** to identify key business intelligences that can improve sales performance

## Work Experience

**AI/SOFTWARE ENGINEER AND SECURITY**– DTI(FREELANCE) – KENYA, KE                 July 2022 - May 2024

- **Security & Testing:** Integrated Burp Suite AI for vulnerability scanning and security testing of AI-driven application

- Designed automated financial reports via Excel Pivot Tables and VBA, reducing processing time by 50%.

- Analyzed domestic/international reinsurance contracts to ensure policy compliance and update

**AI RESEARCH SPECIALIST** – AAI Labs **–** Lithuania, LI                 July 2022 - May 2024

- Re-consolidated and logged premium internal re-insurance rates of major four accounts through First (Chubb's proprietary internal MIS system)
- Implemented a new reporting using Excel Pivot and VBA which help reduced processing time by 50%
- Generated three process reports weekly for continuous accounts for financial and developmental analysis
- Analyzed domestic and international reinsurance agreement contracts wording to issue/update policies accordingly

- Built end-to-end AI pipelines for generative image models, reducing inference time by 40%. Collaborated with UX teams to simplify AI tool interfaces for non-technical users

**BACKEND DEVELOPER** – ZUKU – Kenya, KE                 May 2020 - July 2022

- Backend development (using Java, Spring Boot, Node.js, Express, and GraphQl).
- Designing & developing a RESTful web service that powers mobile applications.
- Developing web and mobile platform for talent acquisition, talent management, billing and monitoring in the medical industry.
- I also integrated Retrieval-Augmented Generation (RAG) methods for better handling of large-scale, context-rich data retrievals, allowing for accurate, AI-driven responses by optimizing the retrieval layer, reducing latency, and increasing relevance in data queries.

**DATA ENTRY INTERN** – KENYA POWER – Kenya, KE                 Jan 2019 - April 2019

- Organized operational expenses checkbooks for 15 properties and audited the company's financial statement
- Entering and updating data in databases accurately and efficiently
- Verifying the accuracy of data before inputting
- Sorting and organizing paperwork for data entry
- Communicating with team members regarding any discrepancies or issues with data

## Education

**SOFTWARE ENGINEERING** – Holberton School – USA, US                 Oct 2023
Majors: Software Engineering.

**SOFTWARE ENGINEERING** – Moringa School – KENYA, KE                 April 2022
Majors: Software Engineering.

**DATA SCIENCE** – Udacity – KENYA, KE                 May 2022
Majors: Data Analysis, EDA, LLM, Feature Enginering.

**CLOUD DEVELOPER** – Udacity – KENYA, KE                 May 2022
Majors: CI/CD, AWS EC2, AWS IAM.

**CISCO NETWORKING ACADEMY, CCNA** – Maseno University {NETACAD} – KENYA, KE                 June 2018
Majors: OSI Model, Network Architecture, Network Security

**BACHELOR OF SCIENCE IN COMPUTER TECHNOLOGY** – Maseno University – KENYA, KE                 June 2020

Majors: Business Analytics, Software Engineering, Data Analysis

## Certifications, Licenses and Job Simulations

**BRITISH AIRWAYS** – Data Science Job Simulation – USA, US                                                July 2024
**Major role:** Web scraping to gain company insights and Predicting customer behavior


**IBM** – Artificial Intelligence  Course – USA, US                                                July 2024
**Major role:** Exploratory data analysis, Data modeling, Model building and interpretation, Machine learning production and Quality Assurance.


**COGNIZANT** – Artificial Intelligence Job Simulation – USA, US                                                July 2023
**Major role:** Exploratory data analysis, Data modeling, Model building and interpretation, Machine learning production and Quality Assurance.


**BCG** – Data Science Job Simulation – USA, US                                                July 2024
**Major role:** Business understanding and hypothesis framing, Exploratory data analysis, Feature engineering and modeling and Findings and recommendations.


**WALMART GLOBAL TECH** – Advance Software Engineering Job Simulation – USA, US                                                July 2024
**Major role:** Creating a data model and Implementing a data model.


**GOLDMAN SACHS** – Software Engineering Job Simulation – USA, US                                                July 2024
M**ajor role:** Cracking leaked password databases.
**AIG** – Cyber Security Job Simulation – USA, US.
**Major role**: Responding to zero-day vulnerability and Bypassing Ransomware.


**DATACOM** – Cybersecurity Job Simulation – USA, US                                                July 2024
**Major role:** APT breach: analyzing the impact on information security and Cybersecurity risk assessment


**JPMORGAN CHASE & CO.** – Cybersecurity Job Simulation – USA, US                                                July 2024
**Major role:** Analyzing a large dataset of fraud in financial payment services, Learning about Application, Security Fundamentals and putting it to use on your own website, Spam and Ham? Building an email classifier and Designing and developing a system to tighten access to sensitive information


**Hackathon Achievements, Projects**
**1. VisionGuard – Microsoft AI Agent Global Hackathon**
🏆 **Ranked #22 Globally**
🔗 **Repository: [VisionGuard]**(https://github.com/danielmuthama23/VisionGuard--Microsoft-AI_Agent-Global-Hack)
📌 **Project:** AI-powered Smart City Parking Management with Blockchain Integration
🛠 **Tech Stack:** Azure Percept Edge AI, Hedera Hashgraph DLT, Semantic Kernel, Multi-Chain NFT Framework


**2. GenoHos – Microsoft HackAI Genomic Analysis**
🏆 **Ranked #6 in Kenya, #22 Globally**
🔗 **Repository: [GenoHos]**(https://github.com/danielmuthama23/GenoHos-Microsoft_HackAI-Genomic_Analysis)
📌 **Project:** AI-driven Genomic Analysis with Molecular Phenotyping & RAG Chat Interface
🛠 **Tech Stack:** Microsoft Fabric, Azure AI Search, Azure OpenAI


**3. Jagendo Hackathon**
🔗 **Repository:  [jagedo-hackathon]**(https://github.com/danielmuthama23/jagedo-hackathon)


**4. DocuNexus AGI-Agent**
🔗 **Repository: [DocuNexus]**(https://github.com/danielmuthama23/DocuNexus-AGI-Agent)
📌 **Project:** Advanced Document Analysis & Media Workflow Automation
🛠 **Tech Stack:** Streamlit, Azure AI, OpenCV, MSS, NLP

## Referees

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